

WHAT IS CLAIMED IS:

1 1. A method for simulating film grain in an input image block, comprising the steps

2 of:

3 (a) computing an average value of at least one image parameter for the block;

4 (b) selecting a film grain block from at least one previously established pool of film grain
5 blocks whose image parameter most closely matches the image parameter of the input image
6 block;

7 (c) blending the selected film grain block with the input image block.

1 2. The method according to claim 1 further comprising the step of de-blocking the

2 selected film grain block prior to blending with the input image block.

1 3. The method according to claim 1 wherein the previously established film grain

2 blocks are organized in the at least one pool based on image intensity.

1 4. The method according to claim 1 further including the step of updating the at least
2 one pool in accordance with characteristics of the input image.

1 5. The method according to claim 3 where a different film grain block is selected for
2 at least one of a different color component..

1 6. The method according to claim 1 further including the step of transforming the
2 selected block prior to the blending step.

1 7. The method according to claim 1 further comprising the step of selecting a film
2 grain block from among a plurality of pools of film grain blocks.

1 8. A method for simulating film grain in an input image from which the film grain
2 has at least been attenuated and been decomposed into input image blocks, comprising the
3 steps of:

4 (a) selecting a successive one of a set of input image blocks;

5 (b) computing an average value of at least one image parameter for the successive block;

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- 6 (c) selecting, from among at least one pool of previously established film grain blocks, a
7 film grain block having image parameter most closely matches the average value of the at least
8 one image parameter of the successive block;
9 (d) repeating steps (a)-(c) for all the pixel blocks in the image; and
10 (e) blending the selected film grain blocks to yield an output image with film grain.

1 9. The method according to claim 8 wherein the previously established film grain
2 blocks are organized in the at least one pool based on image intensity.

1 10. The method according to claim 8 further including the step of updating the at least
2 one pool of pre-established film grain blocks in accordance with characteristics of the input
3 image.

1 11. The method according to claim 8 where a different film grain block is selected for
2 at least one of a different color component.

1 12. The method according to claim 7 further including the step of transforming the
2 selected block prior to repeating steps (c) - (d).

1 13. The method according to claim 8 further comprising the step of selecting a film
2 grain block from among a plurality of pools of film grain blocks.

1 14. The method according to claim 8 further comprising the step of de-blocking the
2 successive film grain block prior to repeating steps (c) - (d).